

# Site Team Evaluation Prioritization

EPA Region 5 Records Ctr.



330574

938785

L0394830005 Kane Co.  
Woodland Landfill Inc.  
ILD 097282750  
SF/HRS

## CERCLA Report



**Illinois Environmental  
Protection Agency**

2200 Churchill Road  
P. O. Box 19276  
Springfield, IL 62794-9276

**SITE TEAM EVALUATION PRIORITIZATION**  
**WOODLAND LANDFILL INC.**

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## **1. SITE BACKGROUND**

### **1.1 INTRODUCTION**

On April 1, 1998, the Illinois Environmental Protection Agency's (IEPA) Site Assessment Program was tasked by the U.S. Environmental Protection Agency (U.S.EPA) to conduct a Site Team Evaluation Prioritization (STEP) of the Woodland Landfill site in Kane County. The STEP was performed under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 40 CFR, 1980 as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, commonly known as Superfund. The STEP was intended to provide a preliminary screening of sites to facilitate U.S.EPA's assignment of site priorities.

In April of 1998, Illinois EPA's CERCLA Site Assessment Unit prepared a Site Team Evaluation Prioritization (STEP) Work Plan for Woodland Landfill which was submitted to USEPA Region V offices for review. A site safety plan was also prepared in April 1998 and reviewed by the Illinois EPA's Office of Chemical Safety. The field activity portion of the inspection occurred on May 12 and 13, 1998. The CERCLA STEP Inspection included the collection of four sediment samples, two groundwater samples from Elgin municipal drinking water wells, and two residential drinking water well samples.

### **1.2 SITE DESCRIPTION**

Woodland Landfill was located on the south side of South Elgin, Illinois, Kane County in Northwest 1/4 Section 1 of Township 40 North, Range 8 East of the 3rd Principal Meridian. Woodland Landfill is an active landfill located north of the intersection of Illinois Route 25 and Gilbert Road with topographic coordinates of latitude 41 degrees 58 minutes 25 seconds north and

longitude 089 degrees 16 minutes 25 seconds west.

The Woodland Landfill site was located near the southeast edge of South Elgin municipal limits. The areas to the north and west of the landfill are primarily residential. Land use to the east of the site consisted of two inactive landfills which are currently being proposed for NPL listing. The Woodland Landfill is an active landfill which is permitted by the IL. EPA. The site consisted of four areas, Phase 1, Phase 2, Phase 3 and Phase 4. Phase 4 is the active portion of the site which is being placed on top of the existing Phases. The site is permitted to accept non hazardous special waste and municipal refuse.

Woodland Landfill property consisted of approximately 212 acres which was surrounded by a security fence with a locked access gate on the west side of the property. Approximately 110 acres of the property have been used for landfill purposes. The main access gate was located on the southwest corner of the site which was regulated by an office with a weigh station to monitor waste coming into the property. The landfill gates remain locked after hours when site personnel are not present.

A surface water drainage pathway started near the northeast corner of the property and flowed west along the north end of the Phase 1 fill area which discharged from the west side of the property. This surface water drainage way consisted of cattail plants and prairie plants which were part of a wetland restoration project. The wetland project was a result of the wetlands area on the property which were relocated with the cooperation of Il. Department of Natural Resources. Surface water drainage from the property was channeled toward this surface water ditch before it discharged from the property. A surface water impoundment was also located on the southwest corner of the property which received surface runoff from the south and east portions of the property. According to site



representatives, this surface water impoundment was used for dust control on the landfill and was not likely to discharge from the property.

The landfill currently has a leachate collection system where leachate drained to a collection point and was pumped into a truck and transported to a municipal treatment plant. A network of groundwater wells exist around the fill portions of the landfill which according to IEPA permit files are sampled quarterly and also annually.

### **1.3 SITE HISTORY**

The Woodland Landfill property was used by a sand and gravel mining operation until the 1940's. Prior to landfill operations, which started in approximately 1976, information pertaining to property use was not found at the time of this investigation. In 1976 the property was owned by a trust from Oakbrook Bank in Oakbrook, Illinois. Waste Management, Inc. had been leasing the property since 1976 when the company first began filling the sand and gravel pit with general refuse and non hazardous waste. According to an Ecology and Environment report conducted in 1995, Waste Management Inc., ARC Disposal Company and Tri-County Landfill Company, Inc. each held one third interest in the land trust with Oakbrook Bank.

### **1.4 REGULATORY STATUS**

In 1976 the site was discovered by IEPA as a result of an application submitted to the agency to develop a landfill. As a result of the permitting process, four monitoring wells were installed in 1976 around Phase 1 of the landfill. Surface water sampling revealed the presence of iron, barium, oil and phenols around Phase 1 of the landfill.

A Screening Site Inspection was conducted in 1989 by E and E Inc. During this inspection, 10 soil and sediment samples and 6 monitoring wells were collected around Phase 1 and 2 areas of

the landfill. Phase 3 of the landfill was proposed in 1990.

Given the years of operation and the federal and state environmental regulations which existed during this time, the site does not fall under the jurisdiction of the Atomic Energy Act (AEA), Toxic Substances Control Act (TSCA), Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), or the Uranium Mill Tailings Radiation Control Act (UMTRCA).

## **2. STEP ACTIVITIES**

This section contains information gathered during the preparation of the formal CERCLA STEP Inspection and previous IEPA activities involving this site. Specific activities included an internal file search, field reconnaissance inspection, site representative interviews, and a sampling visit of the landfill property and surrounding area.

### **2.1 RECONNAISSANCE ACTIVITIES**

A letter was sent to Woodland Landfill addressed to Mr. Ian Johnson on April 6, 1998, to obtain site access. On April 20, 1998, Mr. Brad Taylor of the IEPA performed a site reconnaissance at the Woodland Landfill property. During the inspection, Mr. Taylor met with Mr. Johnson, Environmental Engineer for Waste Management Inc.. Mr. Johnson provided a walk through inspection of the landfill and information pertaining to landfill operations.

The site reconnaissance included a visual inspection of the property to determine the locations of site waste management and containment measures. Potential sampling locations from the property and private groundwater well users located near the landfill were identified during this pre-sampling site reconnaissance. Surrounding land uses include residential properties to the north

and west of Woodland Landfill. Land use east of the Woodland Landfill has been used for landfill purposes. Surface water runoff from the property appeared to drain into an intermittent stream located on the north and west side of the Landfill. Drainage flow of the stream was to the west, under Gilbert Street. After the stream passed under Gilbert Street, it is considered off-site. The stream flowed approximately 0.38 miles west before emptying into the Fox River.

Access to the landfill property was obtained through the main entrance gate located along Route 25. A chain link fence was observed around the perimeter of the landfill property with several access gates which were secured with a padlock. Access to the landfill property was restricted to authorized personnel only and the site was secured with padlocked gates when landfill personnel were not on-site. Current site features include three phases of the landfill which are inactive and a phase IV which is active. The active landfilling operation involves placing waste materials over the existing inactive portions, resulting in an increase of overall vertical height. Woodland Landfill is currently operating under a permit issued by the Illinois EPA Solid Waste Program. On-site monitoring wells were being sampled by a private consulting firm, during the Site Reconnaissance. The on-site monitoring well network are required to be sampled routinely to remain within compliance of the IEPA operating permit.

During the field reconnaissance visit leachate seeps were not observed on the slopes of the landfill. The landfill slopes appeared to be vegetated and erosion control was being controlled. A series of gas collection wells were observed on the landfill.

Mr. Taylor explained the field activities which would include the collection of soil, sediment, private residential well and public well samples. Mr. Johnson was given the opportunity to be present and collect split samples during the May 12 and 13, 1998 sampling event. Mr. Johnson

elected to split samples with IEPA and hired a consultant to be present during field sample collection.

## **2.2 SAMPLING ACTIVITIES**

Illinois EPA personnel collected environmental samples on May 12 and 13, 1998. Two private groundwater drinking wells located west of the landfill were collected to determine whether Woodland Landfill has impacted local groundwater. Two public drinking water wells, located in South Elgin were collected to evaluate public drinking water supplies. Four shallow sediment samples were collected from the intermittent stream on the landfill property and one sediment sample was collected from private property downstream of the landfill (Figure 2a). The purpose of collecting these samples was to help determine if Woodland Landfill property had adversely impacted the on-site stream. Human exposure was not a potential concern due to the security fence around the perimeter of the property. A potential for worker exposure exists since the landfill was active at the time this investigation was conducted. Sample descriptions and location of where samples were collected are listed on Table 1.0.

## **2.3 SAMPLING RESULTS**

Following sample collection, all samples were transferred to containers provided by Illinois EPA's Contract Laboratory Program. The sample containers were packaged and sealed in accordance with IEPA's Bureau of Land Sampling Procedures Guidance Manual. Soil and sediment samples requiring organic analysis were sent to Clayton Environmental Consultants, Inc. in Novi, MI.. Soil and sediment samples requiring inorganic analysis were sent to Southwest Labs of

Oklahoma, Inc. in Broken Arrow, OK. Organic drinking water well samples were sent to Rollins Environmental, Inc. in Ann Arbor, Mi.. Inorganic drinking water well samples were sent to Central Region Lab in Chicago, Il. All received a quality assurance review known as Computer Aided Data Review and Evaluation, CADRE 2.3. A complete analytical data package for Woodland Landfill is located in Appendix E (Volume 2 of the STEP report).

As illustrated in Table 2.0, laboratory analysis of the on-site soil sample revealed the presence of semi-volatiles and inorganic contaminants. Levels of contaminants found in sample X101 were below USEPA Removal Action Levels and also below SCDM soil exposure benchmarks.

Table 2.0 illustrates the laboratory analysis of sediment samples collected from the intermittent stream on the landfill and also the PPE. Sediment analysis revealed the presence of semi-volatile contaminants in offsite sediment sample X205, designated as the PPE, which were not detected in the background sediment sample, X201. Inorganic contaminants detected in sample X205 were not detected at levels significantly exceeding those concentrations detected in sample X201.

Private groundwater well analysis from samples collected during the 1998 field activities are illustrated in Table 2.0. Groundwater used from these private wells are used for drinking purposes and were compared to MCL's. Levels of contaminants in private well samples remained below residential drinking water criteria. Municipal drinking water well analysis are also listed in Table 2.0. The results from these two wells were compared to drinking water benchmarks listed in MCL's and Superfund Chemical Data Matrix and contaminant levels remained below established benchmarks.

### **3.0 SITE SOURCES**

Information obtained throughout this CERCLA investigation has identified the landfill as the primary source type at the Woodland Landfill site. Given the limited nature of the Site Team Evaluation Prioritization, and consequently, the inability of this investigation to fully characterize the site, the possibility exists that future remedial investigative activities may provide additional information that will lead to a more comprehensive understanding of this source or the identification of additional areas of concern.

#### **3.1 LANDFILL**

The Woodland Landfill site operated from 1976 and was currently operating at the time this investigation was conducted. Approximately 110 acres of the total 212 acres have been used for landfill purposes.

Soil sample X101 and sediment samples X201 through X204 were collected within the first seven inches from four locations on the landfill property. Analytical results revealed that a number of contaminants were present at each of the locations at least three times above background levels. Sample X101 was collected from the landfill property where a wetland restoration project was being established, north of the Phase 1 landfilled area.

Two public groundwater well samples collected during the STEP investigation indicated that no levels of contaminants were detected above health concerns. Private groundwater samples collected west of the landfill indicated that no levels of contaminants were detected above health concerns. Samples collected on the landfill property during the STEP investigation did not exceed CERCLA Program Removal Action Levels.

## **MIGRATION PATHWAYS**

The CERCLA Site Assessment Program identifies three migration pathways and one exposure pathway, as identified in CERCLA's Hazard Ranking System, by which hazardous substances may pose a threat to human health and/or the environment. Consequently, sites are evaluated on their known or potential impact to these pathways. The pathways evaluated are groundwater migration, surface water migration, soil exposure, and air migration.

### **4.1 GROUNDWATER PATHWAY**

According to information obtained from past CERCLA investigations, the Woodland Landfill site was located in an area affected by glacial activity. The glacial drift was composed mainly of sand and gravel, ranging from five to 20 feet in thickness. These glacial deposits have been removed and/or disturbed, prior to landfill operations, due to mining of the sand and gravels. The glacial deposits are underlain by a gray silty clay from the Yorkville Till Member which ranges from three to 35 feet in thickness. Discontinuous layers of sand and gravels and silty clays are documented under the Yorkville Till and extend down to bedrock which is a Silurian Dolomite. A Maquoketa Group shale below the Silurian Dolomite, consists of a non-water bearing shale that separates the dolomite and glacial drift groundwater formations from deeper aquifer formations.

A more detailed description of site specific geology can be found in the 1995 Focused Site Inspection Report.

The city of South Elgin utilize four municipal groundwater drinking wells, the closest of which was located 0.25 miles from Woodland Landfill. Groundwater was drawn from glacial deposits and blended prior to distribution. An estimated 7,400 people use groundwater supplied from

South Elgin municipal wells. The two municipal wells in close proximity to the landfill were sampled to determine whether the groundwater drawn from these wells have been adversely impacted.

During the STEP investigation, two private drinking water well samples were collected. These wells were located west of the landfill site which has been established to be downgradient groundwater flow, according to IEPA file information. An estimated 3,500 people within three miles of Woodland Landfill utilize groundwater from glacial drift and Silurian dolomite formations.

The groundwater samples collected during the CERCLA STEP investigation were analyzed for volatiles, semivolatiles, pesticides and inorganic constituents. These contaminant levels were compared to Maximum Contaminant Levels (MCL) and the Superfund Chemical Data Matrix (SCDM) Drinking Water Benchmarks and found below health based benchmarks.

#### **4.2 SURFACE WATER PATHWAY**

The surface water pathway started where surface runoff from the property entered the first perennial water body. This location was defined as the Probable Point of Entry (PPE). The PPE for Woodland landfill was located where the stream left the property and traveled under Gilbert Street and entered a private pond. Sample X205 was identified as the PPE for Woodland landfill. The intermittent stream on the landfill first entered the property on the east side and flowed west along the north and west sides of the Phase 1 portion of the filled area. Surface water continued to flow west which emptied into Brewster Creek and eventually flowed into the Fox River, located approximately 0.38 miles west of the site.

Several targets were found to exist within the 15-mile target distance limit. According to the



National Wetlands Inventory maps wetlands are found north of the Phase 1 which were part of a wetland relocation project. The Illinois Department of Natural Resources have identified known occurrences of endangered or threatened species near Woodland landfill or within the 15 mile target distance limit. A detailed map along with a description of environmentally sensitive areas are listed in Appendix D.

There were no surface water samples collected from the intermittent stream during this STEP inspection. However, three sediment samples were collected from the intermittent stream on landfill property. The purpose of collecting sediments from the stream was to determine whether surface runoff from the landfill had impacted the intermittent stream and also offsite surface water pathways. Sediment sample X205 collected from the PPE contained semi-volatile compounds significantly above levels detected within background sample X201. Inorganic constituents detected in sample X205 were not found at concentrations significantly above the levels of constituents detected upstream of the landfill.

#### **4.3 SOIL EXPOSURE PATHWAY**

The Kane County Soil Survey identified the soil types of the Woodland landfill as Urban land-Orthents, loamy, complex. These soils consist of built up areas which have been altered by cutting and filling activities. Soil borings taken in this area have shown surface and subsurface layers to be disturbed due to previous activities which has made soil identification difficult. Soil nutrients need to be improved to support vegetation especially maintaining sloping areas to reduce erosion.

The property was restricted by a security fence with locked entrance gates. An office was located on the southwest corner of the property to permit access to the landfill property. Employees and authorized personnel are allowed on the landfill property. The facility was not used for

recreational use. The closest residence was located north of the landfill. The area to the west of the site was primarily residentially populated with single family housing. Within 200 feet of the landfill property there were no schools or day care facilities observed during the site reconnaissance.

Only one shallow soil sample was collected from the landfill property during this STEP inspection. The results are listed in Table 2.0. Levels of semi-volatiles, and inorganic constituents were detected which did not exceed health based benchmarks. This onsite soil sample, X101, was collected from a portion of the site which had not been used for landfill purposes to show potential background soil conditions.

Soil samples were collected from the landfill property during the 1995 Screening Site Inspection and revealed benzo(b)fluoranthrene and manganese. Contaminants detected in soil samples collected on Woodland landfill property did not exceed soil exposure benchmarks listed in Superfund Chemical Data Matrix. Residential soil samples were not collected within close proximity of the landfill due to low concentrations of contaminants found on the landfill property. A release of contaminants to the residential community is unlikely due to the low concentrations detected at the landfill source and the geographic locations of the residential community.

#### **4.4 AIR PATHWAY**

No air samples were collected, nor were any air releases observed during the field inspection. In 1980 local residents complained of odors coming from the landfill. These odors were determined to be caused from inadequate daily covering of refuse. During this STEP inspection, there were no strong odors noted during the site reconnaissance. The potential for contaminants to be carried away from the landfill property is unlikely due to low levels of contaminants found in surficial materials.

Surface soils were graded and vegetated to prevent exposure of refuse materials.

The population of the rural community within one mile of the site was approximately 3,874 people. Only one shallow soil sample was collected during this STEP inspection which was intended to show potential soil background conditions. The only offsite soil/sediment sample was collected from the surface water drainage pathway to determine potential impacts to surface waters.

## **5.0 ADDITIONAL RISK-BASED OBJECTIVES**

This section provides a comparison of data generated during STEP activities with additional analytical benchmarks. These benchmarks compare soil, sediment, and/or groundwater data with specific risk-based criteria. The objectives discussed in this section have not been used to assess the site for Hazard Ranking System purposes. Contaminants listed in the tables below which do not have benchmarks established are noted Not Available (NA) and cannot be evaluated at this time.

### **5.1 TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (TACO)**

The Illinois EPA's TACO guidance document (which became effective July 1, 1997), can be used to develop site specific remediation objectives for sites being addressed under the Illinois Site Remediation Program. This document discusses key elements required to develop risk-based remediation objectives, how background values may be used, and provides guidance through three tiers of the risk-based approach. The Illinois EPA uses this guidance, and the groundwater standards established in 36 IL Adm. Code 620, to determine soil and groundwater remediation objectives.

#### **5.1.1 TACO Groundwater Objectives**

The author of this report has concluded that groundwater beneath the site can be classified as Class I groundwater. The decision was based upon the fact that the site was located in an area where groundwater was used by private residences for drinking purposes. Groundwater samples collected from private residences and also municipal groundwater wells did not contain levels of contaminants which exceeded the Class 1 groundwater corrective action objectives. Listed below are groundwater results compared to TACO Class 1 groundwater objectives.

SITE NAME: WOODLAND LANDFILL LD 097282750		TACO GROUNDWATER OBJECTIVES						
SAMPLING POINT PARAMETER	TACO CLASS 1 (PPB) ug/l	G201	G202	G501	G502	G503	F.B.	T.B.
<b>VOLATILES</b> (ug/l)								
Acetone	700.0	5.0 J	—	—	4.0 J	5.0	11.0	5.0 J
2-Butanone (MEK)	NA	—	—	—	—	—	—	—
Tetrachloroethene	5.0	—	—	—	0.4 J	—	—	—
Toluene	1000.0	—	—	—	—	—	—	0.4 J
<b>SEMIVOLATILES</b> (ug/l)								
bis(2-Ethylhexyl)phthalate	6.0	—	—	1.0 J	—	—	—	—
<b>PESTICIDES</b>								
<b>INORGANICS</b>								
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	
Arsenic	50.0	—	—	1.0	—	—	—	—
Barium	2000.0	28.0	34.2	156.0	154.0	59.0	—	—
Cadmium	5.0	0.2	—	0.4	—	0.3	0.3	—
Calcium	NA	65300.0	92100.0	82400.0	81700.0	90400.0	—	—
Chromium	100.0	10.0	—	—	—	—	—	—
Copper	650.0	6.2	—	—	—	—	—	—
Iron	5000.0	820.0	797.0	1980.0	1960.0	1520.0	—	—
Lead	7.5	—	3.0	—	3.0	2.0	—	—
Magnesium	NA	29200.0	42000.0	40800.0	40400.0	43400.0	—	—
Manganese	150.0	128.0	6.5	52.8	52.3	73.0	—	—
Potassium	NA	1590.0	2140.0	3160.0	3100.0	2980.0	—	—
Sodium	NA	13000.0	18200.0	23900.0	23500.0	25400.0	—	—
Zinc	5000.0	—	344.0	—	—	—	—	—

Groundwater samples G201 and G202 were collected from private drinking water wells. G501, G502, and G503 were collected from South Elgin municipal wells.

NA- Benchmark Not Available

## **5.2 ECOLOGICAL SEDIMENT SCREENING BENCHMARKS**

The sediment samples collected from the intermittent stream and also at the PPE were compared to ecological benchmarks to help determine whether site activities have adversely impacted ecological systems within the surface water pathway. Two sources of benchmarks were used for this comparison: Ontario sediment quality guidelines and U.S. EPA ecotox thresholds. Ontario sediment quality guidelines are non-regulatory ecological benchmark values that serve as indicators of potential aquatic impacts. Levels of contaminants below Ontario benchmarks indicate a level of pollution which has no effect on the majority of the sediment-dwelling organisms. Contaminants for which no Ontario benchmarks were available were compared to U.S. EPA ecotox thresholds. Ecotox thresholds are ecological benchmarks above which there is sufficient concern regarding adverse ecological effects to warrant further site investigation. Ecotox thresholds are to be used for screening purposes and are not regulatory criteria, site-specific cleanup standards or remediation goals.

Within sediment sample X204, levels of copper and cyanide were detected above Ontario Sediment Standards. The farthest downstream sample, X205, also contained cyanide which exceeded the Lowest Effect Level. Silver was detected in sample X202 which exceeded the LEL Ontario Sediment Standard and also the Ecotox Threshold benchmark.

SITE NAME: WOODLAND LANDFILL D 097282750		Ontario Sediment Standards					
SAMPLING POINT	LEL	SEL	X201	X202	X203	X204	X205
PARAMETER							
VOLATILES (ug/l)							
Acetone	NA	NA	--	--	--	--	--
2-Butanone (MEK)	NA	NA	8.0 J	--	--	--	--
Tetrachloroethene	NA	NA	--	--	--	--	--
Toluene	NA	NA	20.0	89.0 J	9.0 J	--	--
SEMIVOLATILES (ug/l)							
Total PAH's	2000.0	11000000.0	--	226.0	598.0	436.0	1104.0
PESTICIDES							
INORGANICS							
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Aluminum	NA	NA	4040.0	5080.0	2550.0	5860.0	5760.0
Antimony	NA	NA	--	--	--	--	0.8 J
Arsenic	6.0	33.0	1.6 J	2.3 J	1.2 J	4.5	2.7 J
Barium	NA	NA	28.3	33.2	18.4	31.8	26.3
Beryllium	NA	NA	--	--	--	0.3	0.3
Calcium	NA	NA	26500.0	75200.0	38000.0	92300.0	71800.0
Chromium	26.0	110.0	6.9	8.8	5.5	10.9	10.0
Cobalt	50.0	NA	2.5	4.0	2.5	6.1	4.8
Copper	16.0	110.0	6.8	8.2	5.0	16.2	11.2
Iron	20000.0	40000.0	5160.0	9260.0	5580.0	12700.0	10300.0
Lead	31.0	250.0	6.7	5.4	3.4	9.5	7.5
Magnesium	NA	NA	14600.0	27700.0	16500.0	44000.0	34300.0
Manganese	460.0	1100.0	137.0 J	440.0 J	250.0 J	441.0 J	301.0 J
Nickel	16.0	75.0	6.0	8.6	5.4	14.2	11.1
Potassium	NA	NA	481.0	875.0	350.0	1360.0	1580.0
Silver	0.5	NA	--	0.6 J	--	--	--
Sodium	NA	NA	350.0	427.0	318.0	344.0	389.0
Thallium	NA	NA	--	--	--	--	--
Vanadium	NA	NA	14.2	16.2	8.6	16.4	14.9
Zinc	120.0	820.0	25.5	25.6	19.7	41.8	30.3
Cyanide	0.1	NA	--	--	--	0.1 J	0.2 J

Source: GUIDELINES FOR THE PROTECTION AND MANAGEMENT OF AQUATIC SEDIMENT QUALITY IN ONTARIO.

\* LEL - Lowest Effect Level

\* SEL - Severe Effect Level

\* Bold numbers show concentrations which are equal to or exceed a benchmark value.

NA - Not Applicable

SITE NAME: WOODLAND LANDFILL ID 097282750		ECOTOX THRESHOLD BENCHMARKS Sediment Samples				
SAMPLING POINT	Ecotox Threshold	X201	X202	X203	X204	X205
PARAMETER						
VOLATILES (ug/l)						
Acetone			--	--	--	--
2-Butanone (MEK)		8.0 J	--	--	--	--
Toluene		20.0	89.0 J	9.0 J	--	--
SEMIVOLATILES (ug/l)						
Total PAH's	4000.0	--	226.0	589.0	436.0	1104.0
Phenol	NA	--	--	24.0 J	21.0 J	41.0 J
4-Methylphenol	NA	--	110.0 J	140.0 J	--	--
Phenanthrene	240.0	--	27.0 J	53.0 J	76.0 J	140.0 J
Anthracene	NA	--	--	--	--	30.0 J
Fluoranthene	600.0	--	33.0 J	95.0 J	86.0 J	180.0 J
Pyrene	660.0	--	56.0 J	90.0 J	76.0 J	210.0 J
Benzo(a)anthracene	NA	--	--	47.0 J	36.0 J	86.0 J
Chrysene	NA	--	--	46.0 J	51.0 J	110.0 J
Di-n-Octylphthalate	NA	--	--	--	--	29.0 J
Benzo(b)fluoranthene	NA	--	--	33.0 J	36.0 J	80.0 J
Benzo(k)fluoranthene	NA	--	--	34.0 J	27.0 J	72.0 J
Benzo(a)pyrene	NA	--	--	36.0 J	27.0 J	72.0 J
Indeno(1,2,3-cd)pyrene	NA	--	--	--	--	54.0 J
PESTICIDES						
INORGANICS						
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Aluminum	NA	4040.0	5080.0	2550.0	5860.0	5760.0
Antimony	NA	--	--	--	--	0.8 J
Arsenic	8.2	1.6 J	2.3 J	1.2 J	4.5	2.7 J
Barium	NA	28.3	33.2	18.4	31.8	26.3
Beryllium	NA	--	--	--	0.3	0.3
Calcium	NA	26500.0	75200.0	38000.0	92300.0	71800.0
Chromium	81.0	6.9	8.8	5.5	10.9	10.0
Cobalt	NA	2.5	4.0	2.5	6.1	4.8
Copper	34.0	6.8	8.2	5.0	16.2	11.2
Iron	NA	5160.0	9260.0	5580.0	12700.0	10300.0
Lead	47.0	6.7	5.4	3.4	9.5	7.5
Magnesium	NA	14600.0	27700.0	16500.0	44000.0	34300.0
Manganese	NA	137.0 J	440.0 J	250.0 J	441.0 J	301.0 J
Nickel	21.0	6.0	8.6	5.4	14.2	11.1
Potassium	NA	481.0	875.0	350.0	1360.0	1580.0
Silver	0.5	--	0.6 J	--	--	--
Sodium	NA	350.0	427.0	318.0	344.0	389.0
Thallium	NA	--	--	--	--	--
Vanadium	NA	14.2	16.2	8.6	16.4	14.9
Zinc	150.0	25.5	25.6	19.7	41.8	30.3
Cyanide	NA	--	--	--	0.1 J	0.2 J

Source: USEPA Ecotox Sediment Screening Benchmarks

\* Bold numbers show concentrations which are equal to or exceed a benchmark value.

NA - Not Applicable



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USGS, Decatur, Illinois Quadrangle, 7.5 Minute Series.

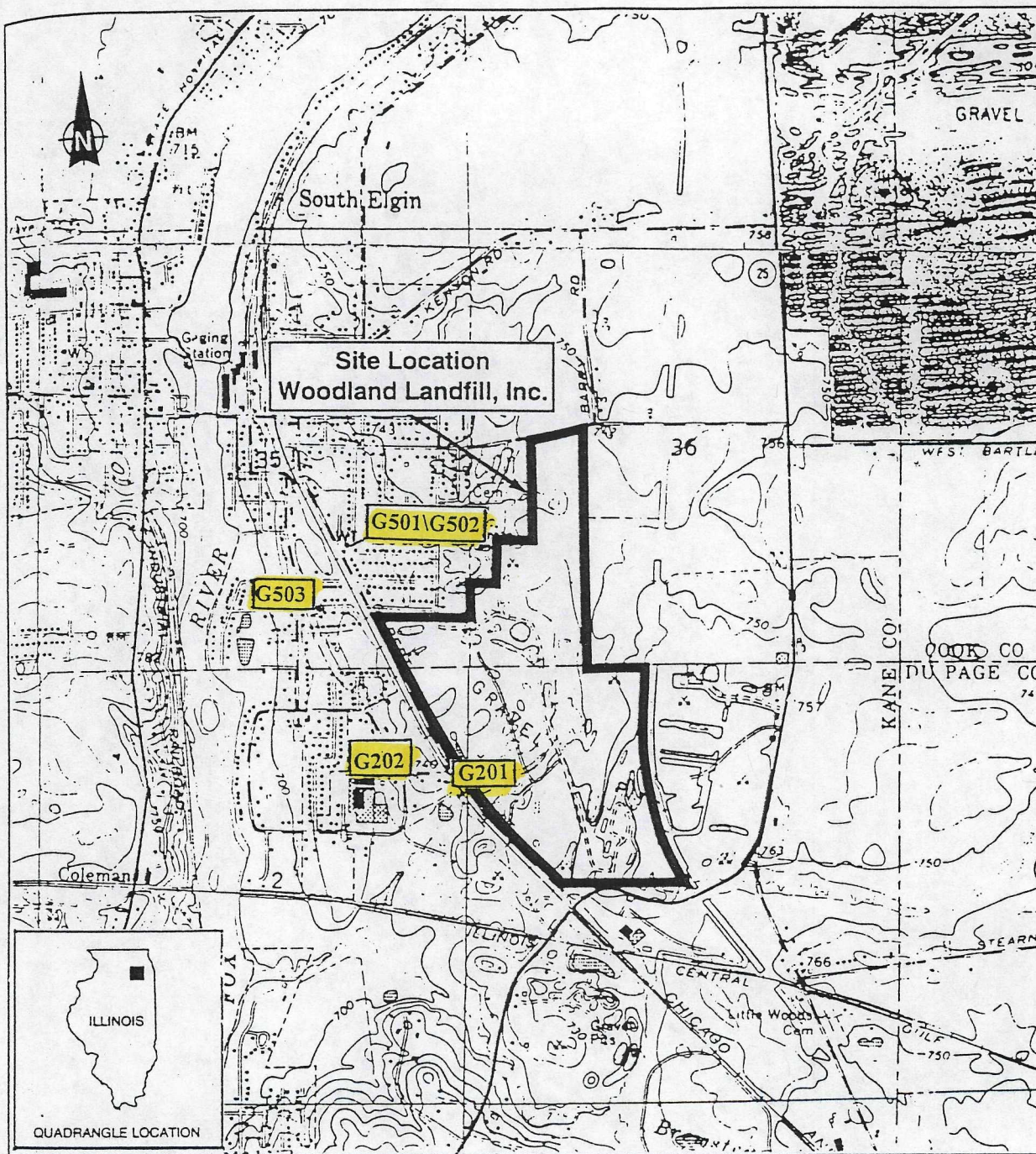


**WOODLAND LANDFILL, INC.**

**SITE LOCATION MAP  
FIGURE 1**

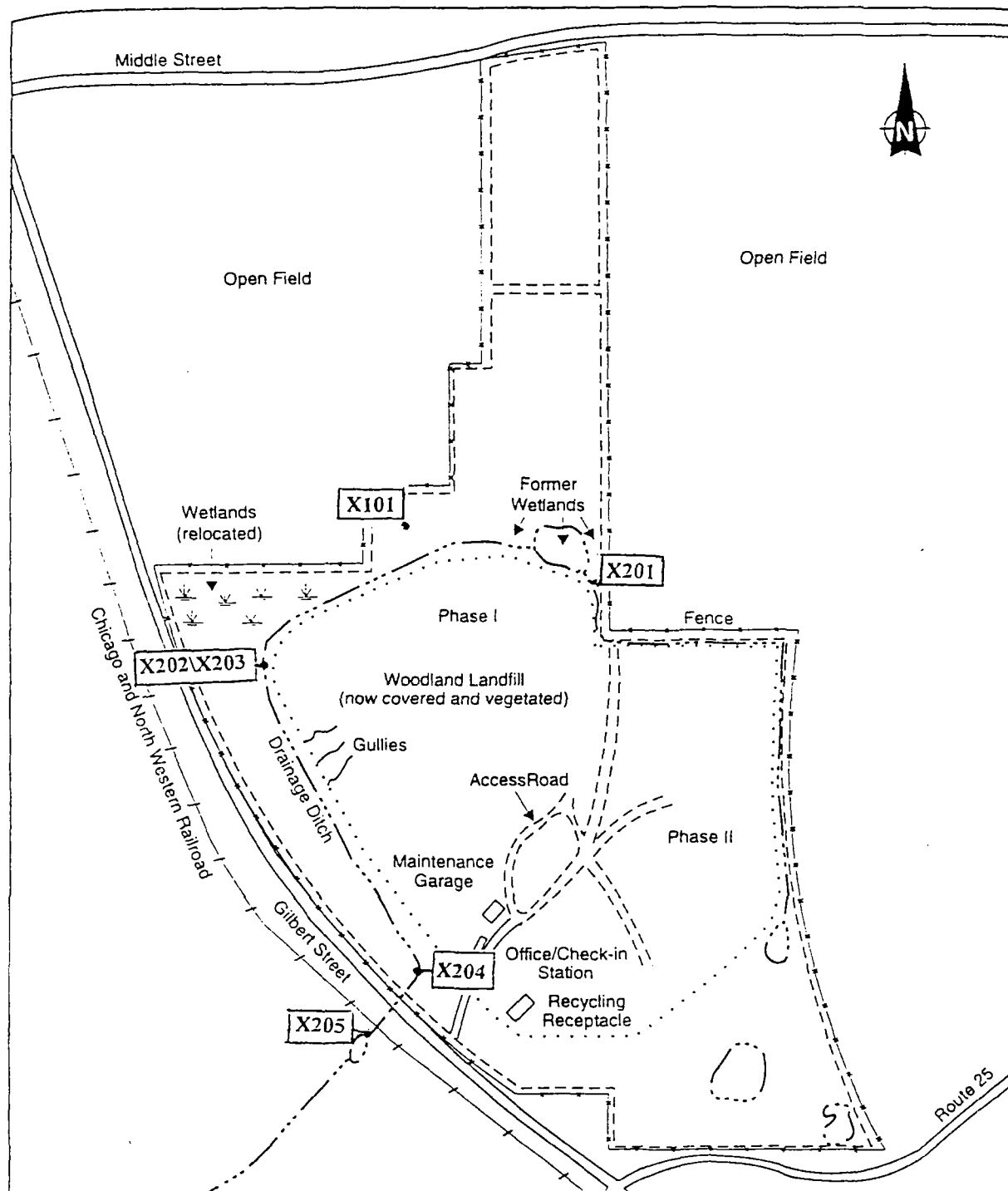






1998 STEP SAMPLING MAP: DRINKING WATER WELL LOCATIONS

FIGURE 2



1998 STEP SAMPLING MAP: SEDIMENT SAMPLES

FIGURE 2a

TABLE 1.0

## SAMPLE DESCRIPTIONS

SAMPLE	DEPTH	APPEARANCE	LOCATION
G501\G502		Water appeared clear in color.	Non-Responsive
G503		Water was clear in color and no problems were noted during collection.	
G201		Water appeared clear and no odor was noted.	
G202		Water was clear in color. There were no problems noted during collection.	
X101	2-4 inches	Soil sample was a silty clay with some sand present. Gray in color.	
X201	0-7 inches	Sediments consisted of dark silty sand.	
X202\X203	0-4 inches	Sediments consisted of dark silts with sand also present. Decaying organic material observed.	
X204	0-7 inches	Sediments consisted of gray silty clay with some sand and gravel present.	
X205	0-8 inches	Sediments consisted of a dark gray silty clay.	

SITE NAME: WOODLAND LANDFILL

ILD 097282750

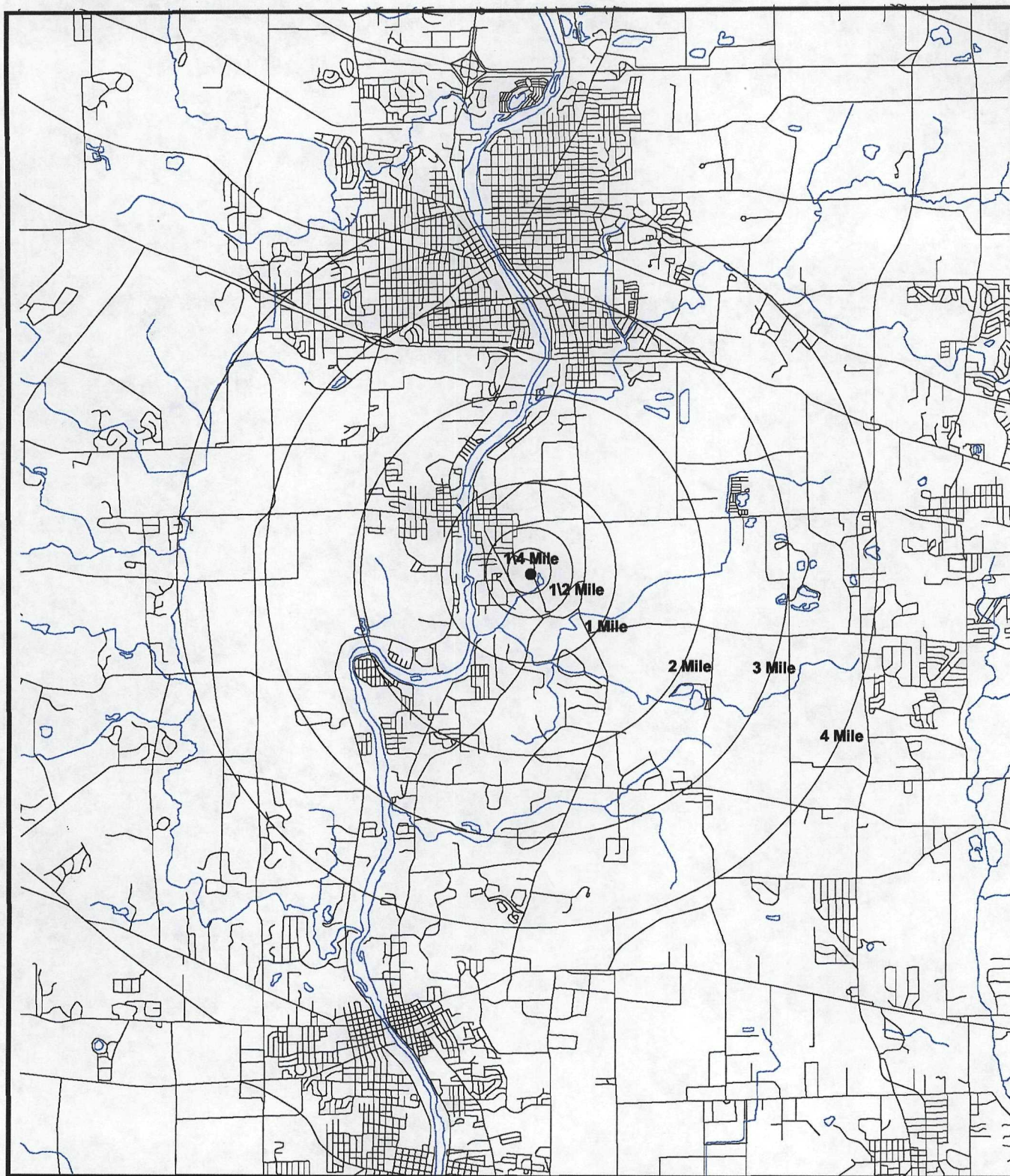
TABLE 2.0 GROUNDWATER AND SEDIMENT SAMPLE SUMMARY

SAMPLING POINT	G201	G202	G501	G502	G503	F.B.	T.B	X101	X201	X202	X203	X204	X205
PARAMETER													
VOLATILES (ug/l)													
Acetone	5.0 J	--	--	4.0 J	5.0	11.0	5.0 J	--	--	--	--	--	--
2-Butanone (MEK)	--	--	--	--	--	--	--	--	8.0 J	--	--	--	--
Tetrachloroethene	--	--	--	0.4 J	--	--	--	--	--	--	--	--	--
Toluene	--	--	--	--	--	--	0.4 J	--	20.0	89.0 J	9.0 J	--	--
SEMIVOLATILES (ug/l)													
Phenol	--	--	--	--	--	--	--	--	--	--	24.0 J	21.0 J	41.0 J
4-Methylphenol	--	--	--	--	--	--	--	--	--	110.0 J	140.0 J	--	--
Phenanthrene	--	--	--	--	--	--	--	28.0 J	--	27.0 J	53.0 J	76.0 J	140.0 J
Anthracene	--	--	--	--	--	--	--	--	--	--	--	--	30.0 J
Fluoranthene	--	--	--	--	--	--	--	30.0 J	--	33.0 J	95.0 J	86.0 J	180.0 J
Pyrene	--	--	--	--	--	--	--	26.0 J	--	56.0 J	90.0 J	76.0 J	210.0 J
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--	--	47.0 J	36.0 J	86.0 J
Chrysene	--	--	--	--	--	--	--	--	--	--	46.0 J	51.0 J	110.0 J
bis(2-Ethylhexyl)phthalate	--	--	1.0 J	--	--	--	--	--	--	--	--	--	--
Di-n-Octylphthalate	--	--	--	--	--	--	--	--	--	--	--	--	29.0 J
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	33.0 J	36.0 J	80.0 J
Benzo(k)fluoranthene	--	--	--	--	--	--	--	--	--	--	34.0 J	27.0 J	72.0 J
Benzo(a)pyrene	--	--	--	--	--	--	--	--	--	--	36.0 J	27.0 J	72.0 J
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	--	--	--	--	--	--	54.0 J
PESTICIDES													
INORGANICS	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Aluminum	--	--	--	--	--	--	--	11600.0	4040.0	5080.0	2550.0	5860.0	5760.0
Antimony	--	--	--	--	--	--	--	1.4 J	--	--	--	--	0.8 J
Arsenic	--	--	1.0	--	--	--	--	5.8	1.6 J	2.3 J	1.2 J	4.5	2.7 J
Barium	28.0	34.2	156.0	154.0	59.0	--	--	50.9	28.3	33.2	18.4	31.8	26.3
Beryllium	--	--	--	--	--	--	--	0.5	--	--	--	0.3	0.3
Cadmium	0.2	--	0.4	--	0.3	0.3	--	--	--	--	--	--	--
Calcium	65300.0	92100.0	82400.0	81700.0	90400.0	--	--	91100.0	26500.0	75200.0	38000.0	92300.0	71800.0
Chromium	10.0	--	--	--	--	--	--	20.6	6.9	8.8	5.5	10.9	10.0
Cobalt	--	--	--	--	--	--	--	7.8	2.5	4.0	2.5	6.1	4.8
Copper	6.2	--	--	--	--	--	--	19.4	6.8	8.2	5.0	16.2	11.2
Iron	820.0	797.0	1980.0	1960.0	1520.0	--	--	18400.0	5160.0	9260.0	5580.0	12700.0	10300.0
Lead	--	3.0	--	3.0	2.0	--	--	12.2	6.7	5.4	3.4	9.5	7.5
Magnesium	29200.0	42000.0	40800.0	40400.0	43400.0	--	--	43200.0	14600.0	27700.0	16500.0	44000.0	34300.0
Manganese	128.0	6.5	52.8	52.3	73.0	--	--	508.0 J	137.0 J	440.0 J	250.0 J	441.0 J	301.0 J
Nickel	--	--	--	--	--	--	--	20.1	6.0	8.6	5.4	14.2	11.1
Potassium	1590.0	2140.0	3160.0	3100.0	2980.0	--	--	2750.0	481.0	875.0	350.0	1360.0	1580.0
Silver	--	--	--	--	--	--	--	0.3 J	--	0.6 J	--	--	--
Sodium	13000.0	18200.0	23900.0	23500.0	25400.0	--	--	504.0	350.0	427.0	318.0	344.0	389.0
Thallium	--	--	--	--	--	--	--	1.7	--	--	--	--	--
Vanadium	--	--	--	--	--	--	--	30.7	14.2	16.2	8.6	16.4	14.9
Zinc	--	344.0	--	--	--	--	--	55.7	25.5	25.6	19.7	41.8	30.3
Cyanide	--	--	--	--	--	--	--	0.1 J	--	--	--	0.1 J	0.2 J

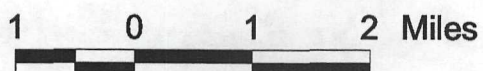
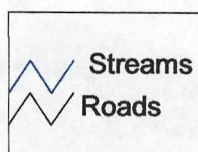
Appendix A

4-MILE RADIUS  
&  
SURFACE WATER MAP

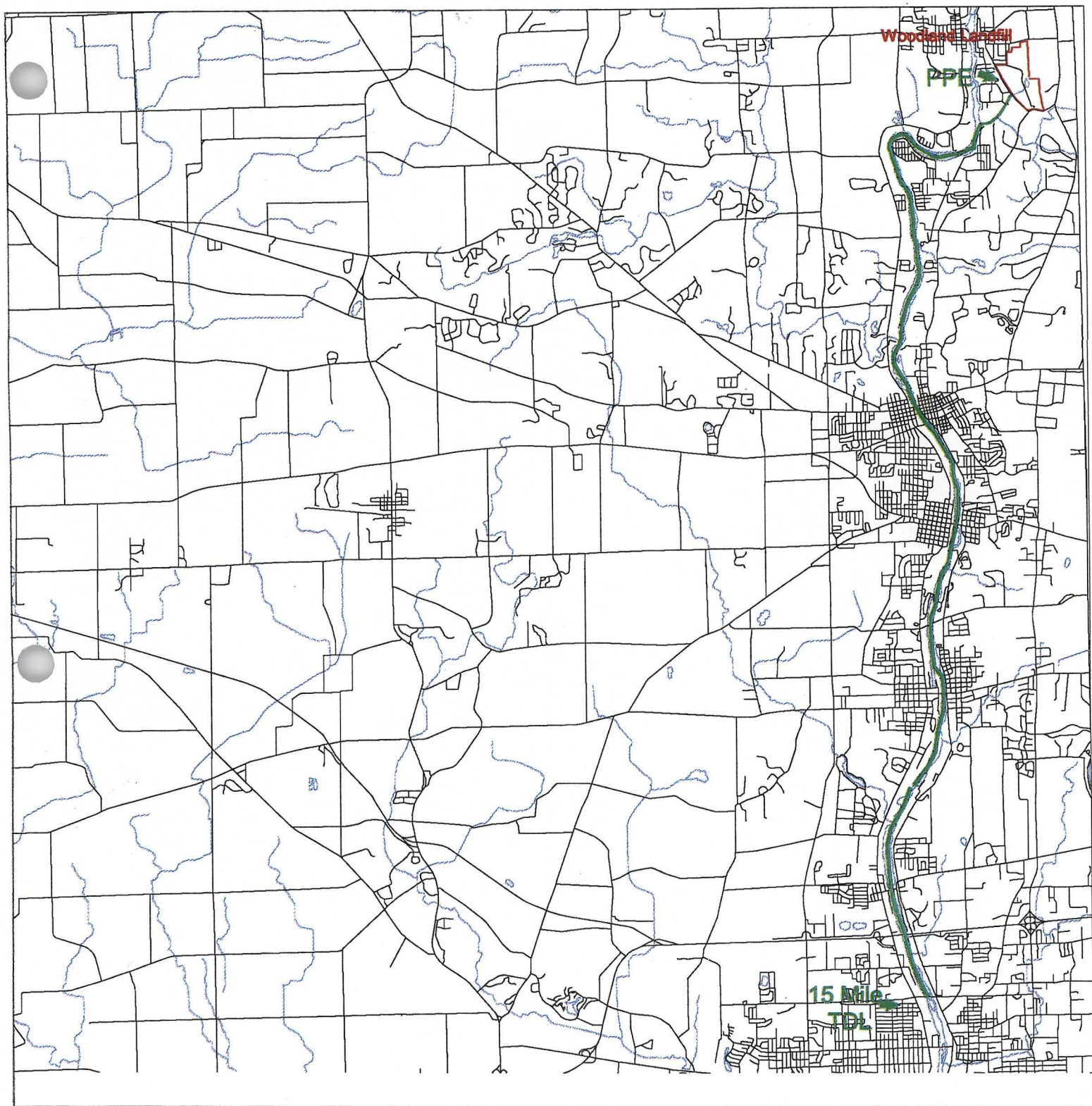




WOODLAND LANDFILL INC.  
4 MILE RADIUS MAP







Woodland Landfill  
15 Mile Surface Water Map



Appendix B  
Target Compound List

## DATA QUALIFIERS

QUALIFIER	DEFINITION ORGANICS	DEFINITION INORGANICS
U	Compound was tested for but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture. For soil samples subjected to GPC clean-up procedures, the CRQL is also multiplied by two, to account for the fact that only half of the extract is recovered.	Analyte was analyzed for but not detected.
J	Estimated value. Used when estimating a concentration for tentatively identified compounds (TICS) where a 1:1 response is assumed or when the mass spectral data indicate the presence of a compound that meets the identification criteria and the result is less than the sample quantitation limit but greater than zero. Used in data validation when the quality control data indicate that a value may not be accurate.	Estimated value. Used in data validation when the quality control data indicate that a value may not be accurate.
C	This flag applies to pesticide results where the identification is confirmed by GC/MS.	Method qualifier indicates analysis by the Manual Spectrophotometric method.
B	Analyte was found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.	The reported value is less than the CRDL but greater than the instrument detection limit (IDL).
D	Identifies all compounds identified in an analysis at a secondary dilution factor. If a sample or extract is re-analyzed at a higher dilution factor as in the "E" flag, the "DL" suffix is appended to the sample number on the Form I for the diluted sample, and <u>all</u> concentration values are flagged with the "D" flag.	Not used.
E	Identifies compounds whose concentrations exceed the calibration range for that specific analysis. All extracts containing compounds exceeding the calibration range must be diluted and analyzed again. If the dilution of the extract causes any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses must be reported on separate Forms I. The Form I for the diluted sample must have the "DL" suffix appended to the sample number.	The reported value is estimated because of the presence of interference.
A	This flag indicates that a TIC is a suspected aldol concentration product formed by the reaction of the solvents used to process the sample in the laboratory.	Method qualifier indicates analysis by Flame Atomic Absorption (AA).
M	Not used.	Duplicate injection (a QC parameter not met).

N	Not used	Spiked sample (a QC parameter not met).
S	Not used.	The reported value was determined by the Method of Standard Additions (MSA).
W	Not used.	Post digestion spike for Furnace AA analysis (a QC parameter) is out of control limits of 85% to 115% recovery, while sample absorbance is less than 50% of spike absorbance.
*	Not used.	Duplicate analysis (a QC parameter not within control limits).
+	Not used.	Correlation coefficient for MSA (a QC parameter) is less than 0.995.
P	Not used.	Method qualifier indicates analysis by ICP (Inductively Coupled Plasma) Spectroscopy.
CV	Not used.	Method qualifier indicates analysis by Cold Vapor AA.
AV	Not used.	Method qualifier indicates analysis by Automated Cold Vapor AA.
AS	Not used.	Method qualifier indicates analysis by Semi-Automated Cold Spectrophotometry.
T	Not used.	Method qualifier indicates Titrimetric analysis.
NR	The analyte was not required to be analyzed.	The analyte was not required to be analyzed.
R	Rejected data. The QC parameters indicate that the data is not usable for any purpose.	Rejected data. The QC parameters indicate that the data is not usable for any purpose.

## **TARGET COMPOUND LIST**

### **Volatile Target Compounds**

Chloromethane	1,2-Dichloropropane
Bromomethane	cis-1,3-Dichloropropene
Vinyl Chloride	Trichloroethene
Chloroethane	Dibromochloromethane
Methylene Chloride	1,1,2-Trichloroethane
Acetone	Benzene
Carbon Disulfide	trans-1,3-Dichloropropene
1,1-Dichloroethene	Bromoform
1,1-Dichloroethane	4-Methyl-2-pentanone
1,2-Dichloroethene (total)	2-Hexanone
Chloroform	Tetrachloroethene
1,2-Dichloroethane	1,1,2,2-Tetrachloroethane
2-Butanone	Toluene
1,1,1-Trichloroethane	Chlorobenzene
Carbon Tetrachloride	Ethylbenzene
Vinyl Acetate	Styrene
Bromodichloromethane	Xylenes (total)

### **Base/Neutral Target Compounds**

Hexachloroethane	2,4-Dinitrotoluene
bis(2-Chloroethyl) Ether	Diethylphthalate
Benzyl Alcohol	N-Nitrosodiphenylamine
bis (2-Chloroisopropyl) Ether	Hexachlorobenzene
N-Nitroso-Di-n-Propylamine	Phenanthrene
Nitrobenzene	4-Bromophenyl-phenylether

Hexachlorobutadiene	Anthracene
2-Methylnaphthalene	Di-n-Butylphthalate
1,2,4-Trichlorobenzene	Fluoranthene
Isophorone	Pyrene
Naphthalene	Butylbenzylphthalate
4-Chloroaniline	bis(2-Ethylhexyl)Phthalate
bis(2-chloroethoxy)Methane	Chrysene
Hexachlorocyclopentadiene	Benzo(a)Anthracene
2-Chloronaphthalene	3-3'-Dichlorobenzidene
2-Nitroaniline	Di-n-Octyl Phthalate
Acenaphthylene	Benzo(b)Fluoranthene
3-Nitroaniline	Benzo(k)Fluoranthene
Acenaphthene	Benzo(a)Pyrene
Dibenzofuran	Ideno(1,2,3-cd)Pyrene
Dimethyl Phthalate	Dibenz(a,h)Anthracene
2,6-Dinitrotoluene	Benzo(g,h,i)Perylene
Fluorene	1,2-Dichlorobenzene
4-Nitroaniline	1,3-Dichlorobenzene
4-Chlorophenyl-phenylether	1,4-Dichlorobenzene

#### Acid Target Compounds

Benzoic Acid	2,4,6-Trichlorophenol
Phenol	2,4,5-Trichlorophenol
2-Chlorophenol	4-Chloro-3-methylphenol
2-Nitrophenol	2,4-Dinitrophenol
2-Methylphenol	2-Methyl-4,6-dinitrophenol
2,4-Dimethylphenol	Pentachlorophenol
4-Methylphenol	4-Nitrophenol
2,4-Dichlorophenol	

### Pesticide/PCB Target Compounds

alpha-BHC	Endrin Ketone
beta-BHC	Endosulfan Sulfate
delta-BHC	Methoxychlor
gamma-BHC (Lindane)	alpha-Chlordane
Heptachlor	gamma-Chlordane
Aldrin	Toxaphene
Heptachlor epoxide	Aroclor-1016
Endosulfan I	Aroclor-1221
4,4'-DDE	Aroclor-1232
Dieldrin	Aroclor-1242
Endrin	Aroclor-1248
4,4'-DDD	Aroclor-1254
Endosulfan II	Aroclor-1260
4,4'-DDT	

### Inorganic Target Compounds

Aluminum	Manganese
Antimony	Mercury
Arsenic	Nickel
Barium	Potassium
Beryllium	Selenium
Cadmium	Silver
Calcium	Sodium
Chromium	Thallium
Cobalt	Vanadium
Copper	Zinc



## Appendix C

### Site Team Evaluation Prioritization Photographs

**SITE NAME:** WOODLAND LANDFILL

**CERCLIS ID:** ILD 097282750

**COUNTY:** KANE

**DATE:** May 13, 1998

**TIME:** 10:15 a.m.

**PHOTO BY:** Brad Taylor

**SAMPLE:** X201

**DIRECTION:** Northwest

**COMMENTS:** Sediment sample taken at the point where surface water enters the property.



**DATE:** May 13, 1998

**TIME:** 10:15 a.m.

**PHOTO BY:** Brad Taylor

**SAMPLE:** X201

**DIRECTION:** South

**COMMENTS:** Shows the pipe which allows surface water to enter Woodland Landfill property.





**SITE NAME:** WOODLAND LANDFILL

**CERCLIS ID:** ILD 097282750

**COUNTY:** KANE

**DATE:** May 13, 1998

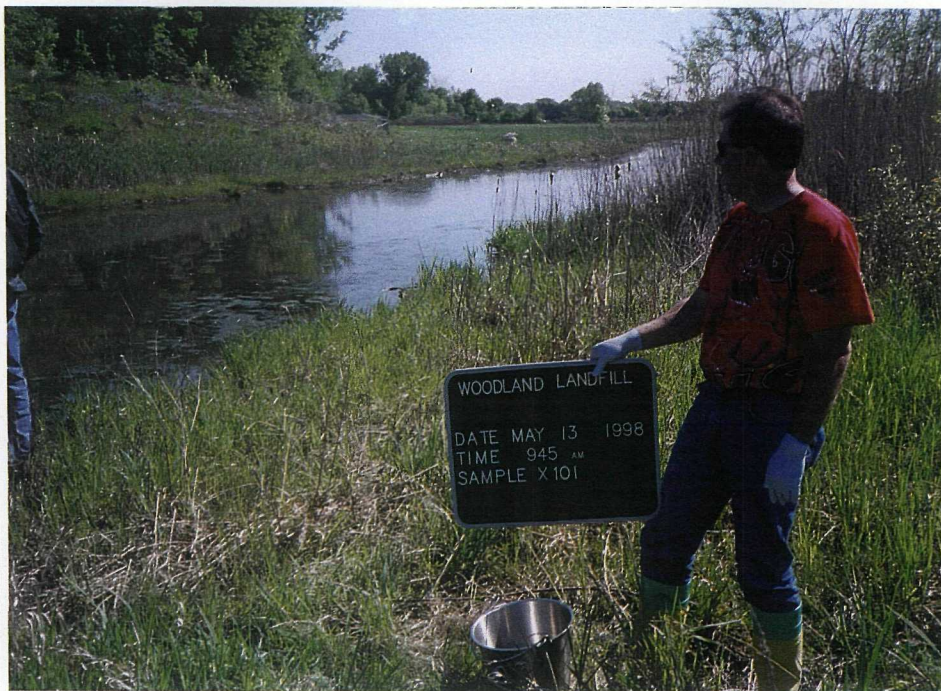
**TIME:** 9:45 a.m.

**PHOTO BY:** Brad Taylor

**SAMPLE:** X101

**DIRECTION:** East

**COMMENTS:** Soil sample collected from the north end of the landfill. Area was heavily vegetated and was part of a Prairie restoration project.



**DATE:** May 13, 1998

**TIME:** 9:45 a.m.

**PHOTO BY:** Brad Taylor

**SAMPLE:** X101

**DIRECTION:** West

**COMMENTS:** See comments above.





**SITE NAME:** WOODLAND LANDFILL

**CERCLIS ID:** ILD 097282750

**COUNTY:** KANE

**DATE:** May 13, 1998

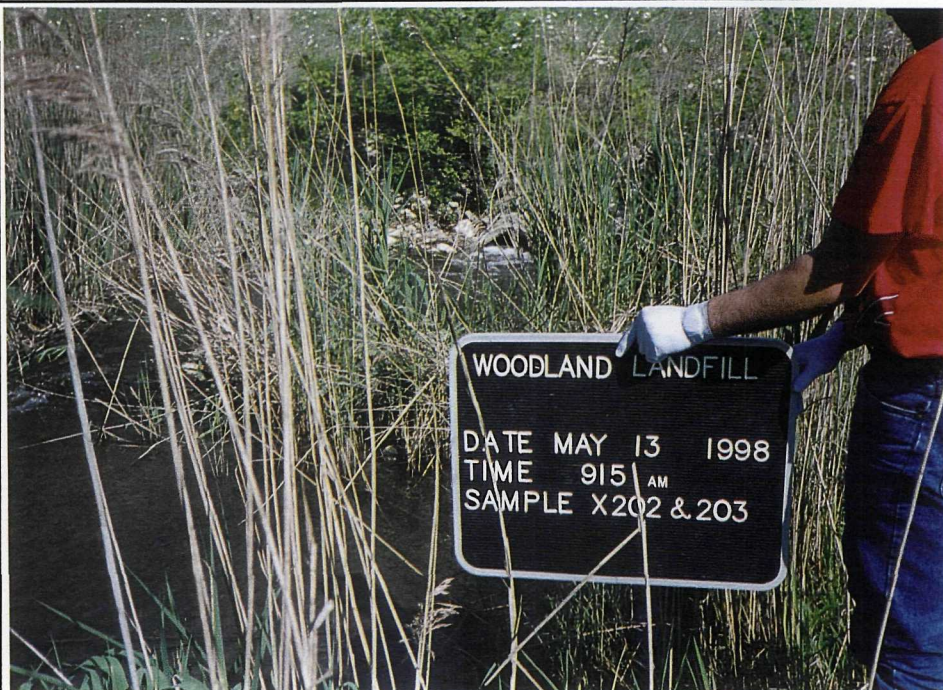
**TIME:** 9:15 a.m.

**PHOTO BY:** Brad Taylor

**SAMPLE:** X202 & X203

**DIRECTION:** North

**COMMENTS:** Sediment sample collected approximately 20 feet downstream of a culvert which was constructed as part of a wetland restoration project.



**DATE:** May 13, 1998

**TIME:** 9:15 a.m.

**PHOTO BY:** Brad Taylor

**SAMPLE:** X202 & X203

**DIRECTION:** East

**COMMENTS:** Photograph showing the landfill slope with a monitoring well on top of the hill.





**SITE NAME:** WOODLAND LANDFILL

**CERCLIS ID:** ILD 097282750

**COUNTY:** KANE

**DATE:** May 13, 1998

**TIME:** 8:30 a.m.

**PHOTO BY:** Brad Taylor

**SAMPLE:** X204

**DIRECTION:** West

**COMMENTS:** Sediment sample collected at the west fence property line just before the surface water stream leaves the landfill property.



**DATE:** May 13, 1998

**TIME:** 8:30 a.m.

**PHOTO BY:** Brad Taylor

**SAMPLE:** X204

**DIRECTION:** North

**COMMENTS:** See comments above. Photograph looking upstream.





**SITE NAME:** WOODLAND LANDFILL

**CERCLIS ID:** ILD 097282750

**COUNTY:** KANE

Non-Responsive

**DATE:** May 13, 1998

**TIME:** 8:00 a.m.

**PHOTO BY:** Brad Taylor

**SAMPLE:** X205

**DIRECTION:** East

**COMMENTS:** See comments above. Photograph looking upstream toward Railroad trussel bridge.



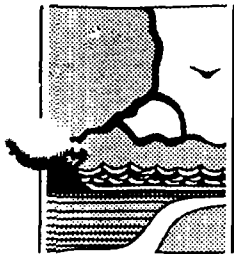
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NON-RESPONSIVE



## Appendix D

### II. Department of Natural Resources Sensitive Environment Review



ILLINOIS  
DEPARTMENT OF  
**NATURAL RESOURCES**

524 South Second Street, Springfield 62701-1787

Jim Edgar, Governor ● Brent Manning, Director

September 2, 1998

Brad Taylor, IEPA  
1021 North Grand Avenue East  
Post Office Box 19276  
Springfield, IL 62794-9276

**RE: Natural Heritage Database Review #57269  
Woodland Landfill - Information Request  
Kane County: T39/40N R8E Multiple Sections**

RECEIVED  
SEP 08 1998  
IEPA/BOL

Dear Mr. Taylor:

According to the Natural Heritage Database, there are known occurrences of endangered or threatened species, Illinois Natural Area Inventory sites, and dedicated Illinois Nature Preserves in the vicinity of the Woodland landfill and within the 15 mile target distance following the Fox River. The following list of sensitive resources is provided for your reference. The area letter will match those on the maps and your check list.

INAI = Illinois Natural Area Inventory site; NP = Illinois Nature Preserve; LT = State listed threatened status; LE = State listed endangered status. (On maps, Green dots are natural communities, yellow dots are plant populations, red triangle species records within 1.5 mile radius).

**Area A:** Pied-Billed Grebe (*Podilymbus podiceps*) LT wetlands surrounding landfill.

**Area B:** South Elgin Sedge Meadow INAI site, Natural Community: Sedge Meadow (river mile @1)

False asphodel (*Tofieldia glutinosa*) LT

Bog bedstraw (*Galium labradoricum*) LT

Spotted Coral Root Orchid (*Corallorhiza maculata*) LT

**Area C:** Woolly milkweed (*Asclepias lanuginosa*) LE

**Area D:** Brewster Creek Fen NP

Spreading sedge (*Carex laxiculmis*) LT

**Area E:** DeSanto's Brewster Creek Site INAI

Yellow-lipped ladies tresses (*Spiranthes lucida*) LE

**Area F:** Norris Woods NP/INAI Natural Community: Dry Mesic Upland (river mile @5)

Pretty sedge (*Carex woodii*) LE

Spreading sedge (*Carex laxiculmis*) LT

Ferson's Creek Sedge Meadow NP/INAI: Natural Community: Sedge Meadow

**Area G:** Mooseheart Ravine INAI: Natural Community: Dry Mesic Upland Forest and Dolomite Cliff (river mile @13)

Snowberry (*Symphoricarpos albus* var *albus*) LE

Shadbush (*Amelanchier sanguinea*) LE

Fox River: (1.5 miles north and south of red triangle on map)

River redhorse (*Moxostoma carinatum*) LT

Greater redhorse (*Moxostoma valenciennesi*) LE

If you need additional information or have questions, please do not hesitate to contact me at 217-785-5500.

Sincerely,

MaryJo Woodruff

Division of Natural Resource Review & Coordination

DEPARTMENT OF CONSERVATION IDENTIFICATION OF  
ENVIRONMENTAL SENSITIVE AREAS

THREE DISTANCE CATEGORIES

SENSITIVE ENVIRONMENTS	On-site	0 1/4 mile	1/4 1/2 mile	stream mileage
I. Critical habitat for Federally designated or proposed endangered or threatened species				
II. Habitat known to be used by Federally designated or proposed endangered or threatened species				
III. State wildlife refuge				
IV. Spawning areas critical for the maintenance of fish/shellfish species within a river system				
V. Terrestrial areas utilized by large or dense aggregations of vertebrate animals for breeding				
VI. Habitat known to be used by State designated or threatened species	* wetland utilized by Red-billed gulls. (A)	South Elgin Sedge Meadow * (B)	woolly milkweed (C) (D) (E)	* 1 (B) 5 (E) See 13 (G) maps
VII. Habitat known to be used by a species under review as to its Federal endangered or threatened status				
VIII. State lands designated for wildlife or game management				
IX. State designated natural area		* South Elgin Sedge Meadow (B)	* Brewster Creek Fen (D) Spreading sedge (E) see list	* 1 (B) 5 (E) See 13 (G) maps
X. Particular areas, relatively small in size, important to the maintenance of unique biotic communities				

*See maps provided for details on sites.*

If any of the sensitive areas identified above exist within the designated target distance limits, please post an asterisk (\*) in the appropriate column.